

0703

#3

ENTERED



OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/040,906A

DATE: 07/17/2002

TIME: 13:48:32

Input Set : N:\paola\10040906.raw

Output Set: N:\CRF3\07172002\J040906A.raw

```

1 <110> APPLICANT: Arnaut, Greta
2   Boets, Annemie
3   Vanneste, Stijn
4   Van Rie, Jeroen
5   Van Houdt, Sara
6 <120> TITLE OF INVENTION: Novel Bacillus thuringiensis insecticidal proteins
7 <130> FILE REFERENCE: 58764.000036
8 <140> CURRENT APPLICATION NUMBER: US/10/040,906A
9 <141> CURRENT FILING DATE: 2002-06-24
10 <160> NUMBER OF SEQ ID NOS: 9
11 <170> SOFTWARE: PatentIn version 3.1
13 <210> SEQ ID NO: 1
14 <211> LENGTH: 1899
15 <212> TYPE: DNA
16 <213> ORGANISM: Bacillus thuringiensis
17 <220> FEATURE:
18 <221> NAME/KEY: CDS
19 <222> LOCATION: (1)..(1896)
20 <223> OTHER INFORMATION:
21 <400> SEQUENCE: 1
22   atg aat aat gta tta aat aac gga aga act act att tgt gat gcg tat      48
23   Met Asn Asn Val Leu Asn Asn Gly Arg Thr Thr Ile Cys Asp Ala Tyr
24   1                    5                    10                    15
25   aat gta gtg gcc cat gat cca ttt agt ttt gag cat aaa tca tta gat      96
26   Asn Val Val Ala His Asp Pro Phe Ser Phe Glu His Lys Ser Leu Asp
27   20                    25                    30
28   acc atc cga aaa gaa tgg atg gag tgg aaa aga aca gat cat agt tta      144
29   Thr Ile Arg Lys Glu Trp Met Glu Trp Lys Arg Thr Asp His Ser Leu
30   35                    40                    45
31   tat gta gct cct ata gtc gga act gtt tct agc ttt ctg cta aag aag      192
32   Tyr Val Ala Pro Ile Val Gly Thr Val Ser Ser Phe Leu Leu Lys Lys
33   50                    55                    60
34   gtg ggg agt ctt att gga aaa agg ata ttg agt gaa tta tgg ggg tta      240
35   Val Gly Ser Leu Ile Gly Lys Arg Ile Leu Ser Glu Leu Trp Gly Leu
36   65                    70                    75                    80
37   ata ttt cct agt ggt agc aca aat cta atg caa gat att tta agg gag      288
38   Ile Phe Pro Ser Gly Ser Thr Asn Leu Met Gln Asp Ile Leu Arg Glu
39   85                    90                    95
40   aca gaa caa ttc cta aat caa aga ctt aat aca gac act ctt gcc cgt      336
41   Thr Glu Gln Phe Leu Asn Gln Arg Leu Asn Thr Asp Thr Leu Ala Arg
42   100                   105                   110
43   gta aat gcg gaa ttg gaa ggg ctg caa gcg aat ata agg gag ttt aat      384
44   Val Asn Ala Glu Leu Glu Gly Leu Gln Ala Asn Ile Arg Glu Phe Asn

```

DATE: 07/17/2002

TIME: 13:48:32

Input Set : N:\paola\10040906.raw

Output Set: N:\CRF3\07172002\J040906A.raw

45																	
46	caa	caa	gta	gat	aat	ttt	tta	aat	cct	act	caa	aac	cct	gtt	cct	tta	432
47	Gln	Gln	Val	Asp	Asn	Phe	Leu	Asn	Pro	Thr	Gln	Asn	Pro	Val	Pro	Leu	
48			130														
49	tca	ata	act	tct	tca	gtt	aat	aca	atg	cag	caa	tta	ttt	cta	aat	aga	480
50	Ser	Ile	Thr	Ser	Ser	Val	Asn	Thr	Met	Gln	Gln	Leu	Phe	Leu	Asn	Arg	
51			145														
52	tta	ccc	cag	ttc	cgt	gtg	caa	gga	tac	caa	ctg	tta	tta	tta	cct	tta	528
53	Leu	Pro	Gln	Phe	Arg	Val	Gln	Gly	Tyr	Gln	Leu	Leu	Leu	Leu	Pro	Leu	
54																	
55	ttt	gca	cag	gca	gcc	aat	atg	cat	ctt	tct	ttt	att	aga	gat	gtt	gtt	576
56	Phe	Ala	Gln	Ala	Ala	Asn	Met	His	Leu	Ser	Phe	Ile	Arg	Asp	Val	Val	
57																	
58	ctc	aat	gca	gat	gaa	tgg	gga	att	tca	gca	gca	aca	tta	cgt	acg	tat	624
59	Leu	Asn	Ala	Asp	Glu	Trp	Gly	Ile	Ser	Ala	Ala	Thr	Leu	Arg	Thr	Tyr	
60																	
61	caa	aat	tat	ctg	aaa	aat	tat	aca	aca	gag	tac	tct	aat	tat	tgt	ata	672
62	Gln	Asn	Tyr	Leu	Lys	Asn	Tyr	Thr	Thr	Glu	Tyr	Ser	Asn	Tyr	Cys	Ile	
63																	
64	aat	acg	tat	caa	act	gcg	ttt	aga	ggc	tta	aac	acc	cgt	tta	cac	gat	720
65	Asn	Thr	Tyr	Gln	Thr	Ala	Phe	Arg	Gly	Leu	Asn	Thr	Arg	Leu	His	Asp	
66																	
67	atg	tta	gaa	ttt	aga	aca	tat	atg	ttt	tta	aat	gta	ttt	gaa	tat	gta	768
68	Met	Leu	Glu	Phe	Arg	Thr	Tyr	Met	Phe	Leu	Asn	Val	Phe	Glu	Tyr	Val	
69																	
70	tct	atc	tgg	tcg	ttg	ttt	aaa	tat	caa	agc	ctt	cta	gta	tct	tct	ggc	816
71	Ser	Ile	Trp	Ser	Leu	Phe	Lys	Tyr	Gln	Ser	Leu	Leu	Val	Ser	Ser	Gly	
72																	
73	gct	aat	tta	tat	gca	agc	ggc	agt	gga	cca	cag	cag	act	caa	tca	ttt	864
74	Ala	Asn	Leu	Tyr	Ala	Ser	Gly	Ser	Gly	Pro	Gln	Gln	Thr	Gln	Ser	Phe	
75																	
76	act	tca	caa	gac	tgg	cca	ttt	tta	tat	tct	ctt	ttc	caa	gtt	aat	tca	912
77	Thr	Ser	Gln	Asp	Trp	Pro	Phe	Leu	Tyr	Ser	Leu	Phe	Gln	Val	Asn	Ser	
78																	
79	aat	tat	gtg	tta	aat	ggc	ttt	agt	ggc	gct	aga	ctt	acg	cag	act	ttc	960
80	Asn	Tyr	Val	Leu	Asn	Gly	Phe	Ser	Gly	Ala	Arg	Leu	Thr	Gln	Thr	Phe	
81																	
82	cct	aat	att	ggt	ggt	tta	cct	ggt	act	act	aca	act	cac	gca	ttg	ctt	1008
83	Pro	Asn	Ile	Gly	Gly	Leu	Pro	Gly	Thr	Thr	Thr	Thr	His	Ala			

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/040,906A

DATE: 07/17/2002

TIME: 13:48:32

Input Set : N:\paola\10040906.raw

Output Set: N:\CRF3\07172002\J040906A.raw

```

94      ggt gtt aat acc gtt aca aat tgg caa aca gaa tcg ttt gag tca act      1200
95      Gly Val Asn Thr Val Thr Asn Trp Gln Thr Glu Ser Phe Glu Ser Thr
96      385                               390                               395                               400
97      tta ggt tta agg tgt ggt gct ttt aca gct cgt ggt aat tca aac tat      1248
98      Leu Gly Leu Arg Cys Gly Ala Phe Thr Ala Arg Gly Asn Ser Asn Tyr
99      405                               410                               415
100     ttc cca gat tat ttt atc cgt aat att tca gga gtt cct tta gtt gtt      1296
101     Phe Pro Asp Tyr Phe Ile Arg Asn Ile Ser Gly Val Pro Leu Val Val
102     420                               425                               430
103     aga aat gaa gat tta aga aga ccg tta cac tat aat gaa ata aga aat      1344
104     Arg Asn Glu Asp Leu Arg Arg Pro Leu His Tyr Asn Glu Ile Arg Asn
105     435                               440                               445
106     ata gaa agt cct tca gga aca cct ggt gga tta cga gct tat atg gta      1392
107     Ile Glu Ser Pro Ser Gly Thr Pro Gly Gly Leu Arg Ala Tyr Met Val
108     450                               455                               460
109     tct gtg cat aat aga aaa aat aat atc tat gcc gtg cat gaa aat ggt      1440
110     Ser Val His Asn Arg Lys Asn Asn Ile Tyr Ala Val His Glu Asn Gly
111     465                               470                               475                               480
112     act atg att cat tta gcg ccg gaa gat tat aca gga ttc acc ata tcg      1488
113     Thr Met Ile His Leu Ala Pro Glu Asp Tyr Thr Gly Phe Thr Ile Ser
114     485                               490                               495
115     ccg ata cat gca act caa gtg aat aat caa acg cga aca ttt att tct      1536
116     Pro Ile His Ala Thr Gln Val Asn Asn Gln Thr Arg Thr Phe Ile Ser
117     500                               505                               510
118     gaa aaa ttt gga aat caa ggt gat tcc tta aga ttt gaa caa agc aac      1584
119     Glu Lys Phe Gly Asn Gln Gly Asp Ser Leu Arg Phe Glu Gln Ser Asn
120     515                               520                               525
121     acg aca gca cgt tat aca ctt aga gga aat gga aat agt tac aat ctt      1632
122     Thr Thr Ala Arg Tyr Thr Leu Arg Gly Asn Gly Asn Ser Tyr Asn Leu
123     530                               535                               540
124     tat tta aga gta tct tca cta gga aat tcc act att cga gtt act ata      1680
125     Tyr Leu Arg Val Ser Ser Leu Gly Asn Ser Thr Ile Arg Val Thr Ile
126     545                               550                               555                               560
127     aac ggt agg gtt tat act gct tca aat gtt aat act act aca aat aac      1728
128     Asn Gly Arg Val Tyr Thr Ala Ser Asn Val Asn Thr Thr Thr Asn Asn
129     565                               570                               575
130     gat gga gtt aat gat aat ggc gct cgt ttt tta gat att aat atg ggt      1776
131     Asp Gly Val Asn Asp Asn Gly Ala Arg Phe Leu Asp Ile Asn Met Gly
132     580                               585                               590
133     aat gta gta gca agt gat aat act aat gta ccg tta gat ata aat gtg      1824
134     Asn Val Val Ala Ser Asp Asn Thr Asn Val Pro Leu Asp Ile Asn Val
135     595                               600                               605
136     aca ttt aac tcc ggt act caa ttt gag ctt atg aat att atg ttt gtt      1872
137     Thr Phe Asn Ser Gly Thr Gln Phe Glu Leu Met Asn Ile Met Phe Val
138     610                               615                               620
139     cca act aat ctt cca cca ata tat taa      1899
140     Pro Thr Asn Leu Pro Pro Ile Tyr
141     625                               630
143 <210> SEQ ID NO: 2

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/040,906A

DATE: 07/17/2002

TIME: 13:48:32

Input Set : N:\paola\10040906.raw

Output Set: N:\CRF3\07172002\J040906A.raw

```

144 <211> LENGTH: 632
145 <212> TYPE: PRT
146 <213> ORGANISM: Bacillus thuringiensis
147 <400> SEQUENCE: 2
148 Met Asn Asn Val Leu Asn Asn Gly Arg Thr Thr Ile Cys Asp Ala Tyr
149 1 5 10 15
150 Asn Val Val Ala His Asp Pro Phe Ser Phe Glu His Lys Ser Leu Asp
151 20 25 30
152 Thr Ile Arg Lys Glu Trp Met Glu Trp Lys Arg Thr Asp His Ser Leu
153 35 40 45
154 Tyr Val Ala Pro Ile Val Gly Thr Val Ser Ser Phe Leu Leu Lys Lys
155 50 55 60
156 Val Gly Ser Leu Ile Gly Lys Arg Ile Leu Ser Glu Leu Trp Gly Leu
157 65 70 75 80
158 Ile Phe Pro Ser Gly Ser Thr Asn Leu Met Gln Asp Ile Leu Arg Glu
159 85 90 95
160 Thr Glu Gln Phe Leu Asn Gln Arg Leu Asn Thr Asp Thr Leu Ala Arg
161 100 105 110
162 Val Asn Ala Glu Leu Glu Gly Leu Gln Ala Asn Ile Arg Glu Phe Asn
163 115 120 125
164 Gln Gln Val Asp Asn Phe Leu Asn Pro Thr Gln Asn Pro Val Pro Leu
165 130 135 140
166 Ser Ile Thr Ser Ser Val Asn Thr Met Gln Gln Leu Phe Leu Asn Arg
167 145 150 155 160
168 Leu Pro Gln Phe Arg Val Gln Gly Tyr Gln Leu Leu Leu Leu Pro Leu
169 165 170 175
170 Phe Ala Gln Ala Ala Asn Met His Leu Ser Phe Ile Arg Asp Val Val
171 180 185 190
172 Leu Asn Ala Asp Glu Trp Gly Ile Ser Ala Ala Thr Leu Arg Thr Tyr
173 195 200 205
174 Gln Asn Tyr Leu Lys Asn Tyr Thr Thr Glu Tyr Ser Asn Tyr Cys Ile
175 210 215 220
176 Asn Thr Tyr Gln Thr Ala Phe Arg Gly Leu Asn Thr Arg Leu His Asp
177 225 230 235 240
178 Met Leu Glu Phe Arg Thr Tyr Met Phe Leu Asn Val Phe Glu Tyr Val
179 245 250 255
180 Ser Ile Trp Ser Leu Phe Lys Tyr Gln Ser Leu Leu Val Ser Ser Gly
181 260 265 270
182 Ala Asn Leu Tyr Ala Ser Gly Ser Gly Pro Gln Gln Thr Gln Ser Phe
183 275 280 285
184 Thr Ser Gln Asp Trp Pro Phe Leu Tyr Ser Leu Phe Gln Val Asn Ser
185 290 295 300
186 Asn Tyr Val Leu Asn Gly Phe Ser Gly Ala Arg Leu Thr Gln Thr Phe
187 305 310 315 320
188 Pro Asn Ile Gly Gly Leu Pro Gly Thr Thr Thr Thr His Ala Leu Leu
189 325 330 335
190 Ala Ala Arg Val Asn Tyr Ser Gly Gly Val Ser Ser Gly Asp Ile Gly
191 340 345 350
192 Ala Val Phe Asn Gln Asn Phe Ser Cys Ser Thr Phe Leu Pro Pro Leu

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/040,906A

DATE: 07/17/2002

TIME: 13:48:32

Input Set : N:\paola\10040906.raw

Output Set: N:\CRF3\07172002\J040906A.raw

```

193          355          360          365
194    Leu Thr Pro Phe Val Arg Ser Trp Leu Asp Ser Gly Ser Asp Arg Gly
195          370          375          380
196    Gly Val Asn Thr Val Thr Asn Trp Gln Thr Glu Ser Phe Glu Ser Thr
197          385          390          395          400
198    Leu Gly Leu Arg Cys Gly Ala Phe Thr Ala Arg Gly Asn Ser Asn Tyr
199          405          410          415
200    Phe Pro Asp Tyr Phe Ile Arg Asn Ile Ser Gly Val Pro Leu Val Val
201          420          425          430
202    Arg Asn Glu Asp Leu Arg Arg Pro Leu His Tyr Asn Glu Ile Arg Asn
203          435          440          445
204    Ile Glu Ser Pro Ser Gly Thr Pro Gly Gly Leu Arg Ala Tyr Met Val
205          450          455          460
206    Ser Val His Asn Arg Lys Asn Asn Ile Tyr Ala Val His Glu Asn Gly
207          465          470          475          480
208    Thr Met Ile His Leu Ala Pro Glu Asp Tyr Thr Gly Phe Thr Ile Ser
209          485          490          495
210    Pro Ile His Ala Thr Gln Val Asn Asn Gln Thr Arg Thr Phe Ile Ser
211          500          505          510
212    Glu Lys Phe Gly Asn Gln Gly Asp Ser Leu Arg Phe Glu Gln Ser Asn
213          515          520          525
214    Thr Thr Ala Arg Tyr Thr Leu Arg Gly Asn Gly Asn Ser Tyr Asn Leu
215          530          535          540
216    Tyr Leu Arg Val Ser Ser Leu Gly Asn Ser Thr Ile Arg Val Thr Ile
217          545          550          555          560
218    Asn Gly Arg Val Tyr Thr Ala Ser Asn Val Asn Thr Thr Thr Asn Asn
219          565          570          575
220    Asp Gly Val Asn Asp Asn Gly Ala Arg Phe Leu Asp Ile Asn Met Gly
221          580          585          590
222    Asn Val Val Ala Ser Asp Asn Thr Asn Val Pro Leu Asp Ile Asn Val
223          595          600          605
224    Thr Phe Asn Ser Gly Thr Gln Phe Glu Leu Met Asn Ile Met Phe Val
225          610          615          620
226    Pro Thr Asn Leu Pro Pro Ile Tyr
227          625          630
229 <210> SEQ ID NO: 3
230 <211> LENGTH: 1899
231 <212> TYPE: DNA
232 <213> ORGANISM: Bacillus thuringiensis
233 <220> FEATURE:
234 <221> NAME/KEY: CDS
235 <222> LOCATION: (1)..(1896)
236 <223> OTHER INFORMATION:
237 <400> SEQUENCE: 3
238    atg aat agt gta ttg aat agc gga aga act act att tgt gat gcg tat      48
239    Met Asn Ser Val Leu Asn Ser Gly Arg Thr Thr Ile Cys Asp Ala Tyr
240      1          5          10          15
241    aat gta gtg gct cat gat cca ttt agt ttt caa cat aaa tca tta gat      96
242    Asn Val Val Ala His Asp Pro Phe Ser Phe Gln His Lys Ser Leu Asp

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/040,906A

DATE: 07/17/2002
TIME: 13:48:33

Input Set : N:\paola\10040906.raw
Output Set: N:\CRF3\07172002\J040906A.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:7; Line(s) 666

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/040,906A

DATE: 07/17/2002

TIME: 13:48:33

Input Set : N:\paola\10040906.raw

Output Set: N:\CRF3\07172002\J040906A.raw